

## SEQUENCE LISTING

<110> Chen, Bao-Lu  
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<120> Antagonist Anti-CD40 Monoclonal  
Antibodies and Methods for Their Use

<130> PP20107.004 (282916)

<150> 60/565,710  
<151> 2004-04-27

<150> 60/525,579  
<151> 2003-11-26

<150> 60/517,337  
<151> 2003-11-04

<160> 12

<170> FastSEQ for Windows Version 4.0

<210> 1  
<211> 720  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Coding sequence for light chain of 12.12 human  
anti-CD40 antibody

<221> CDS  
<222> (1)...(720)

<400> 1  
atg gcg ctc cct gct cag ctc ctg ggg ctg cta atg ctc tgg gtc tct 48  
Met Ala Leu Pro Ala Gln Leu Leu Gly Ile Leu Met Leu Trp Val Ser  
1 5 10 15

gga tcc agt ggg gat att gtg atg act cag tct cca ctc tcc ctg acc 96  
Gly Ser Ser Gly Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Thr  
20 25 30

gtc acc cct gga gag ccg gcc tcc atc tcc tgc agg tcc agt cag agc 144  
Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser  
35 40 45

ctc ctg tat agt aat gga tac aac tat ttg gat tgg tac ctg cag aag 192  
Leu Leu Tyr Ser Asn Gly Tyr Asn Tyr Leu Asp Trp Tyr Leu Gln Lys  
50 55 60

cca ggg cag tct cca cag gtc ctg atc tct ttg ggt tct aat cgg gcc 240  
Pro Gly Gln Ser Pro Gln Val Leu Ile Ser Leu Gly Ser Asn Arg Ala  
65 70 75 80

tcc ggg gtc cct gac agg ttc agt ggc agt gga tca ggc aca gat ttt 288  
Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Thr Asp Phe

85	90	95	
aca ctg aaa atc agc aga gtg gag gct gag gat gtt ggg gtt tat tac Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr 100 105 110 336			
tgc atg caa gct cga caa act cca ttc act ttc ggc cct ggg acc aaa Cys Met Gln Ala Arg Gln Thr Pro Phe Thr Phe Gly Pro Gly Thr Lys 115 120 125 384			
gtg gat atc aga cga act gtg gct gca cca tct gtc ttc atc ttc ccg Val Asp Ile Arg Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro 130 135 140 432			
cca tct gat gag cag ttg aaa tct gga act gcc tct gtt gtg tgc ctg Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu 145 150 155 160 480			
ctg aat aac ttc tat ccc aga gag gcc aaa gta cag tgg aag gtg gat Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp 165 170 175 528			
aac gcc ctc caa tcg ggt aac tcc cag gag agt gtc aca gag cag gac Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp 180 185 190 576			
agc aag gac agc acc tac agc ctc agc agc acc ctg acg ctg agc aaa Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys 195 200 205 624			
gca gac tac gag aaa cac aaa gtc tac gcc tgc gaa gtc acc cat cag Ala Asp Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln 210 215 220 672			
ggc ctg agc tcg ccc gtc aca aag agc ttc aac agg gga gag tgt tag Gly Leu Ser Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys * 225 230 235 720			

<210> 2  
<211> 239  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Light chain of 12.12 human anti-CD40 antibody

<400> 2  
Met Ala Leu Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Ser  
1 5 10 15  
Gly Ser Ser Gly Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Thr  
20 25 30  
Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser  
35 40 45  
Leu Leu Tyr Ser Asn Gly Tyr Asn Tyr Leu Asp Trp Tyr Leu Gln Lys  
50 55 60  
Pro Gly Gln Ser Pro Gln Val Leu Ile Ser Leu Gly Ser Asn Arg Ala  
65 70 75 80  
Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Thr Asp Phe  
85 90 95  
Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr  
100 105 110  
Cys Met Gln Ala Arg Gln Thr Pro Phe Thr Phe Gly Pro Gly Thr Lys  
115 120 125  
Val Asp Ile Arg Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro

130	135	140
Pro Ser Asp Glu Gln Leu	Lys Ser Gly Thr Ala	Ser Val Val Cys Leu
145	150	155
Leu Asn Asn Phe Tyr Pro Arg Glu Ala	Lys Val Gln Trp Lys Val Asp	160
165	170	175
Asn Ala Leu Gln Ser Gly Asn Ser Gln	Glu Ser Val Thr Glu Gln Asp	180
180	185	190
Ser Lys Asp Ser Thr Tyr Ser	Leu Ser Ser Thr Leu Thr Leu Ser Lys	195
195	200	205
Ala Asp Tyr Glu Lys His Lys	Val Tyr Ala Cys Glu Val Thr His Gln	210
210	215	220
Gly Leu Ser Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys		225
	230	235

&lt;210&gt; 3

&lt;211&gt; 2016

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Coding sequence for heavy chain of 12.12 human  
anti-CD40 antibody (with introns)

&lt;400&gt; 3

atg gag ttt ggg ctg agc tgg gtt ttc ctt gtt gct att tta aga ggt	48
gtc cag tgc cag gtg cag ttg gtg gag tct ggg gga ggc gtg gtc cag	96
cct ggg agg tcc ctg aga ctc tcc tgt gca gcc tct gga ttc acc ttc	144
agt agc tat ggc atg cac tgg gtc cgc cag gct cca ggc aag ggg ctg	192
gag tgg gtg gca gtt ata tca tat gag gaa agt aat aga tac cat gca	240
gac tcc gtg aag ggc cga ttc acc atc tcc aga gac aat tcc aag atc	288
acg ctg tat ctg caa atg aac agc ctc aga act gag gac acg gct gtg	336
tat tac tgt gcg aga gat ggg ggt ata gca gca cct ggg cct gac tac	384
tgg ggc cag gga acc ctg gtc acc gtc tcc tca gca agt acc aag ggc	432
cca tcc gtc ttc ccc ctg gcg ccc gct agc aag agc acc tct ggg ggc	480
aca gcg gcc ctg ggc tgc ctg gtc aag gac tac ttc ccc gaa ccg gtg	528
acg gtg tgc tgg aac tca ggc gcc ctg acc agc ggc gtg cac acc ttc	576
ccg gct gtc cta cag tcc tca gga ctc tac tcc ctc agc agc gtg gtg	624
acc gtg ccc tcc agc agc ttg ggc acc cag acc tac atc tgc aac gtg	672
aat cac aag ccc agc aac acc aag gtg gac aag aga gtt ggt gag agg	720
cca gca cag gga ggg agg gtg tct gct gga agc cag gct cag cgc tcc	768
tgc ctg gac gca tcc cgg cta tgc agt ccc agt cca ggg cag caa ggc	816
agg ccc cgt ctg cct ctt cac ccc gag gcc tct gcc cgc ccc act cat	864
gct cag gga gag ggt ctt ctg get ttt tcc cca ggc tct ggg cag gca	912
cag gct agg tgc ccc taa ccc agg ccc tgc aca caa agg ggc agg tgc	960
tgg gct cag acc tgc caa gag cca tat ccc gga gga ccc tgc ccc tga	1008
cct aag ccc acc cca aag gcc aaa ctc tcc act ccc tca gct cgg aca	1056
cct tct ctc ctc cca gat tcc agt aac tcc caa tct tct ctc tgc aga	1104
gcc caa atc ttg tga caa aac tca cac atg ccc acc gtg ccc agg taa	1152
gcc agc cca ggc ctc gcc ctc cag ctc aag gcg gga cag gtg ccc tag	1200
agt agc ctg cat cca ggg aca ggc ccc agc cgg gtg ctg aca cgt cca	1248
cct cca tct ctt cct cag cac ctg aac tcc tgg ggg gac cgt cag tct	1296
tcc tct tcc ccc cca aac cca agg aca ccc tca tga tct ccc gga ccc	1344
ctg agg tca cat gcg tgg tgg tgg acg tga gcc acg aag acc ctg agg	1392
tca agt tca act ggt acg tgg acg gcg tgg agg tgc ata atg cca aga	1440
caa agc cgc ggg agg agc agt aca aca gca cgt acc gtg tgg tca gcg	1488
tcc tca ccg tcc tgc acc agg act ggc tga atg gca agg agt aca agt	1536
gca agg tct cca aca aag ccc tcc cag ccc cca tcg aga aaa cca tct	1584
cca aag cca aag gtg gga ccc gtg ggg tgc gag ggc cac atg gac aga	1632
ggc cgg ctc ggc cca ccc tct gcc ctg aga gtg acc gct gta cca acc	1680
tct gtc cct aca ggg cag ccc cga gaa cca cag gtg tac acc ctg ccc	1728
cca tcc cgg gag gag atg acc aag aac cag gtc agc ctg acc tgc ctg	1776
gtc aaa ggc ttc tat ccc agc gac atc gcc gtg gag tgg gag agc aat	1824
ggg cag ccg gag aac aac tac aag acc acg cct ccc gtg ctg gac tcc	1872
gac ggc tcc ttc ttc ctc tat agc aag ctc acc gtg gac aag agc agg	1920
tgg cag cag ggg aac gtc ttc tca tgc tcc gtg atg cat gag gct ctg	1968

cac aac cac tac acg cag aag agc ctc tcc ctg tct ccg ggt aaa tga 2016

<210> 4  
<211> 469  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Heavy chain of 12.12 human anti-CD40 antibody

<400> 4  
Met Glu Phe Gly Leu Ser Trp Val Phe Leu Val Ala Ile Leu Arg Gly  
1 5 10 15  
Val Gln Cys Gln Val Gln Leu Val Glu Ser Gly Gly Val Val Gln  
20 25 30  
Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe  
35 40 45  
Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu  
50 55 60  
Glu Trp Val Ala Val Ile Ser Tyr Glu Glu Ser Asn Arg Tyr His Ala  
65 70 75 80  
Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Ile  
85 90 95  
Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Thr Glu Asp Thr Ala Val  
100 105 110  
Tyr Tyr Cys Ala Arg Asp Gly Gly Ile Ala Ala Pro Gly Pro Asp Tyr  
115 120 125  
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly  
130 135 140  
Pro Ser Val Phe Pro Leu Ala Pro Ala Ser Lys Ser Thr Ser Gly Gly  
145 150 155 160  
Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val  
165 170 175  
Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe  
180 185 190  
Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val  
195 200 205  
Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val  
210 215 220  
Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Pro Lys  
225 230 235 240  
Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu  
245 250 255  
Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr  
260 265 270  
Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val  
275 280 285  
Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val  
290 295 300  
Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser  
305 310 315 320  
Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu  
325 330 335  
Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala  
340 345 350  
Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro  
355 360 365  
Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln  
370 375 380  
Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala  
385 390 395 400  
Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr  
405 410 415  
Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu  
420 425 430

Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser  
 435 440 445  
 Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser  
 450 455 460  
 Leu Ser Pro Gly Lys  
 465

<210> 5  
 <211> 469  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Heavy chain of variant of 12.12 human anti-CD40 antibody

<400> 5  
 Met Glu Phe Gly Leu Ser Trp Val Phe Leu Val Ala Ile Leu Arg Gly  
 1 5 10 15  
 Val Gln Cys Gln Val Gln Leu Val Glu Ser Gly Gly Val Val Gln  
 20 25 30  
 Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe  
 35 40 45  
 Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu  
 50 55 60  
 Glu Trp Val Ala Val Ile Ser Tyr Glu Glu Ser Asn Arg Tyr His Ala  
 65 70 75 80  
 Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Ile  
 85 90 95  
 Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Thr Glu Asp Thr Ala Val  
 100 105 110  
 Tyr Tyr Cys Ala Arg Asp Gly Gly Ile Ala Ala Pro Gly Pro Asp Tyr  
 115 120 125  
 Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly  
 130 135 140  
 Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly  
 145 150 155 160  
 Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val  
 165 170 175  
 Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe  
 180 185 190  
 Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val  
 195 200 205  
 Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val  
 210 215 220  
 Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Pro Lys  
 225 230 235 240  
 Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu  
 245 250 255  
 Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr  
 260 265 270  
 Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val  
 275 280 285  
 Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val  
 290 295 300  
 Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser  
 305 310 315 320  
 Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu  
 325 330 335  
 Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala  
 340 345 350  
 Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro  
 355 360 365  
 Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln  
 370 375 380

Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala  
 385                   390                   395                   400  
 Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr  
 405                   405                   410                   415  
 Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu  
 420                   420                   425                   430  
 Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser  
 435                   440                   445  
 Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser  
 450                   455                   460  
 Leu Ser Pro Gly Lys  
 465

<210> 6  
<211> 239  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Light chain of 5.9 human anti-CD40 antibody

<400> 6  
 Met Ala Leu Leu Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Pro  
 1                   5                   10                   15  
 Gly Ser Ser Gly Ala Ile Val Met Thr Gln Pro Pro Leu Ser Ser Pro  
 20                   20                   25                   30  
 Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser  
 35                   35                   40                   45  
 Leu Val His Ser Asp Gly Asn Thr Tyr Leu Asn Trp Leu Gln Gln Arg  
 50                   50                   55                   60  
 Pro Gly Gln Pro Pro Arg Leu Leu Ile Tyr Lys Phe Phe Arg Arg Leu  
 65                   65                   70                   75                   80  
 Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ala Gly Thr Asp Phe  
 85                   85                   90                   95  
 Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr  
 100                   100                   105                   110  
 Cys Met Gln Val Thr Gln Phe Pro His Thr Phe Gly Gln Gly Thr Arg  
 115                   115                   120                   125  
 Leu Glu Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro  
 130                   130                   135                   140  
 Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu  
 145                   145                   150                   155                   160  
 Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp  
 165                   165                   170                   175  
 Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp  
 180                   180                   185                   190  
 Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys  
 195                   195                   200                   205  
 Ala Asp Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln  
 210                   210                   215                   220  
 Gly Leu Ser Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys  
 225                   225                   230                   235

<210> 7  
<211> 474  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Heavy chain of 5.9 human anti-CD40 antibody

<400> 7  
 Met Gly Ser Thr Ala Ile Leu Ala Leu Leu Leu Ala Val Leu Gln Gly  
 1                   5                   10                   15

Val Cys Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys  
     20                       25                       30  
 Pro Gly Glu Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe  
     35                       40                       45  
 Thr Ser Tyr Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu  
     50                       55                       60  
 Glu Trp Met Gly Ile Ile Tyr Pro Gly Asp Ser Asp Thr Arg Tyr Ser  
     65                       70                       75                       80  
 Pro Ser Phe Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Ser  
     85                       90                       95  
 Thr Ala Tyr Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met  
     100                       105                       110  
 Tyr Tyr Cys Ala Arg Gly Thr Ala Ala Gly Arg Asp Tyr Tyr Tyr Tyr  
     115                       120                       125  
 Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser  
     130                       135                       140  
 Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ala Ser Lys  
     145                       150                       155                       160  
 Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr  
     165                       170                       175  
 Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser  
     180                       185                       190  
 Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser  
     195                       200                       205  
 Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr  
     210                       215                       220  
 Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys  
     225                       230                       235                       240  
 Arg Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys  
     245                       250                       255  
 Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro  
     260                       265                       270  
 Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys  
     275                       280                       285  
 Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp  
     290                       295                       300  
 Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu  
     305                       310                       315                       320  
 Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu  
     325                       330                       335  
 His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn  
     340                       345                       350  
 Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly  
     355                       360                       365  
 Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu  
     370                       375                       380  
 Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr  
     385                       390                       395                       400  
 Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn  
     405                       410                       415  
 Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe  
     420                       425                       430  
 Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn  
     435                       440                       445  
 Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His His Tyr Thr  
     450                       455                       460  
 Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys  
     465                       470

&lt;210&gt; 8

&lt;211&gt; 474

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Heavy chain of variant of 5.9 human anti-CD40 antibody

<400> 8  
 Met Gly Ser Thr Ala Ile Leu Ala Leu Leu Ala Val Leu Gln Gly  
     1              5                 10                 15  
 Val Cys Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys  
     20             25                 30  
 Pro Gly Glu Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe  
     35             40                 45  
 Thr Ser Tyr Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu  
     50             55                 60  
 Glu Trp Met Gly Ile Ile Tyr Pro Gly Asp Ser Asp Thr Arg Tyr Ser  
     65             70                 75                 80  
 Pro Ser Phe Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Ser  
     85             90                 95  
 Thr Ala Tyr Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met  
     100            105                110  
 Tyr Tyr Cys Ala Arg Gly Thr Ala Ala Gly Arg Asp Tyr Tyr Tyr Tyr  
     115            120                125  
 Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser  
     130            135                140  
 Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys  
     145            150                155                160  
 Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr  
     165            170                175  
 Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser  
     180            185                190  
 Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser  
     195            200                205  
 Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr  
     210            215                220  
 Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys  
     225            230                235                240  
 Arg Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys  
     245            250                255  
 Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro  
     260            265                270  
 Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys  
     275            280                285  
 Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp  
     290            295                300  
 Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu  
     305            310                315                320  
 Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu  
     325            330                335  
 His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn  
     340            345                350  
 Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly  
     355            360                365  
 Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu  
     370            375                380  
 Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr  
     385            390                395                400  
 Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn  
     405            410                415  
 Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe  
     420            425                430  
 Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn  
     435            440                445  
 Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr  
     450            455                460  
 Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys  
     465            470

<210> 9  
 <211> 612  
 <212> DNA  
 <213> Homo sapiens  
  
 <220>  
 <221> CDS  
 <222> (1)...(612)  
  
 <221> misc\_feature  
 <222> (0)...(0)  
 <223> Coding sequence for short isoform of human CD40  
  
 <400> 9  
 atg gtt cgt ctg cct ctg cag tgc gtc ctc tgg ggc tgc ttg ctg acc 48  
 Met Val Arg Leu Pro Leu Gln Cys Val Leu Trp Gly Cys Leu Leu Thr  
   1               5               10               15  
  
 gct gtc cat cca gaa cca ccc act gca tgc aga gaa aaa cag tac cta 96  
 Ala Val His Pro Glu Pro Pro Thr Ala Cys Arg Glu Lys Gln Tyr Leu  
   20               25               30  
  
 ata aac agt cag tgc tgt tct ttg tgc cag cca gga cag aaa ctg gtg 144  
 Ile Asn Ser Gln Cys Cys Ser Leu Cys Gln Pro Gly Gln Lys Leu Val  
   35               40               45  
  
 agt gac tgc aca gag ttc act gaa acg gaa tgc ctt cct tgc ggt gaa 192  
 Ser Asp Cys Thr Glu Phe Thr Glu Thr Glu Cys Leu Pro Cys Gly Glu  
   50               55               60  
  
 agc gaa ttc cta gac acc tgg aac aga gag aca cac tgc cac cag cac 240  
 Ser Glu Phe Leu Asp Thr Trp Asn Arg Glu Thr His Cys His Gln His  
   65               70               75               80  
  
 aaa tac tgc gac ccc aac cta ggg ctt cgg gtc cag cag aag ggc acc 288  
 Lys Tyr Cys Asp Pro Asn Leu Gly Leu Arg Val Gln Gln Lys Gly Thr  
   85               90               95  
  
 tca gaa aca gac acc atc tgc acc tgt gaa gaa ggc tgg cac tgt acg 336  
 Ser Glu Thr Asp Thr Ile Cys Thr Cys Glu Glu Gly Trp His Cys Thr  
   100              105              110  
  
 agt gag gcc tgt gag agc tgt gtc ctg cac cgc tca tgc tcg ccc ggc 384  
 Ser Glu Ala Cys Glu Ser Cys Val Leu His Arg Ser Cys Ser Pro Gly  
   115              120              125  
  
 ttt ggg gtc aag cag att gct aca ggg gtt tct gat acc atc tgc gag 432  
 Phe Gly Val Lys Gln Ile Ala Thr Gly Val Ser Asp Thr Ile Cys Glu  
   130              135              140  
  
 ccc tgc cca gtc ggc ttc ttc tcc aat gtg tca tct gct ttc gaa aaa 480  
 Pro Cys Pro Val Gly Phe Phe Ser Asn Val Ser Ser Ala Phe Glu Lys  
   145              150              155              160  
  
 tgt cac cct tgg aca agg tcc cca gga tcg gct gag agc cct ggt ggt 528  
 Cys His Pro Trp Thr Arg Ser Pro Gly Ser Ala Glu Ser Pro Gly Gly  
   165              170              175  
  
 gat ccc cat cat ctt cggt gat cct gtt tgc cat cct ctt ggt gct ggt 576  
 Asp Pro His His Leu Arg Asp Pro Val Cys His Pro Leu Gly Ala Gly  
   180              185              190  
  
 ctt tat caa aaa ggt ggc caa gaa gcc aac caa taa 612  
 Leu Tyr Gln Lys Gly Gly Gln Glu Ala Asn Gln \*  
   195              200

<210> 10  
<211> 203  
<212> PRT  
<213> Homo sapiens

<400> 10  
Met Val Arg Leu Pro Leu Gln Cys Val Leu Trp Gly Cys Leu Leu Thr  
1 5 10 15  
Ala Val His Pro Glu Pro Pro Thr Ala Cys Arg Glu Lys Gln Tyr Leu  
20 25 30  
Ile Asn Ser Gln Cys Cys Ser Ile Cys Gln Pro Gly Gln Lys Leu Val  
35 40 45  
Ser Asp Cys Thr Glu Phe Thr Glu Thr Glu Cys Leu Pro Cys Gly Glu  
50 55 60  
Ser Glu Phe Leu Asp Thr Trp Asn Arg Glu Thr His Cys His Gln His  
65 70 75 80  
Lys Tyr Cys Asp Pro Asn Leu Gly Leu Arg Val Gln Gln Lys Gly Thr  
85 90 95  
Ser Glu Thr Asp Thr Ile Cys Thr Cys Glu Glu Gly Trp His Cys Thr  
100 105 110  
Ser Glu Ala Cys Glu Ser Cys Val Leu His Arg Ser Cys Ser Pro Gly  
115 120 125  
Phe Gly Val Lys Gln Ile Ala Thr Gly Val Ser Asp Thr Ile Cys Glu  
130 135 140  
Pro Cys Pro Val Gly Phe Ser Asn Val Ser Ser Ala Phe Glu Lys  
145 150 155 160  
Cys His Pro Trp Thr Arg Ser Pro Gly Ser Ala Glu Ser Pro Gly Gly  
165 170 175  
Asp Pro His His Leu Arg Asp Pro Val Cys His Pro Leu Gly Ala Gly  
180 185 190  
Leu Tyr Gln Lys Gly Gly Gln Glu Ala Asn Gln  
195 200

<210> 11  
<211> 834  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (1)...(834)

<221> misc\_feature  
<222> (0)...(0)  
<223> Coding sequence for long isoform of human CD40

<400> 11  
atg gtt cgt ctg cct ctg cag tgc gtc ctc tgg ggc tgc ttg ctg acc 48  
Met Val Arg Leu Pro Leu Gln Cys Val Leu Trp Gly Cys Leu Leu Thr  
1 5 10 15  
gct gtc cat cca gaa cca ccc act gca tgc aga gaa aaa cag tac cta 96  
Ala Val His Pro Glu Pro Pro Thr Ala Cys Arg Glu Lys Gln Tyr Leu  
20 25 30  
ata aac agt cag tgc tgt tct ttg tgc cag cca gga cag aaa ctg gtg 144  
Ile Asn Ser Gln Cys Cys Ser Leu Cys Gln Pro Gly Gln Lys Leu Val  
35 40 45  
agt gac tgc aca gag ttc act gaa acg gaa tgc ctt cct tgc ggt gaa 192  
Ser Asp Cys Thr Glu Phe Thr Glu Thr Glu Cys Leu Pro Cys Gly Glu  
50 55 60  
agc gaa ttc cta gac acc tgg aac aga gag aca cac tgc cac cag cac 240

Ser	Glu	Phe	Leu	Asp	Thr	Trp	Asn	Arg	Glu	Thr	His	Cys	His	Gln	His	
65					70				75						80	
aaa tac tgc gac ccc aac cta ggg ctt cg	gtc cag cag aag ggc acc															288
Lys Tyr Cys Asp Pro Asn Leu Gly Leu Arg Val Gln Gln Lys Gly Thr																
85						90									95	
tca gaa aca gac acc atc tgc acc tgt gaa gaa ggc tgg cac tgt acg																336
Ser Glu Thr Asp Thr Ile Cys Thr Cys Glu Glu Gly Trp His Cys Thr																
100						105									110	
agt gag gcc tgt gag agc tgt gtc ctg cac cgc tca tgc tcg ccc ggc																384
Ser Glu Ala Cys Glu Ser Cys Val Leu His Arg Ser Cys Ser Pro Gly																
115						120									125	
ttt ggg gtc aag cag att gct aca ggg gtt tct gat acc atc tgc gag																432
Phe Gly Val Lys Gln Ile Ala Thr Gly Val Ser Asp Thr Ile Cys Glu																
130						135									140	
ccc tgc cca gtc ggc ttc ttc tcc aat gtg tca tct gct ttc gaa aaa																480
Pro Cys Pro Val Gly Phe Phe Ser Asn Val Ser Ser Ala Phe Glu Lys																
145						150									160	
tgt cac cct tgg aca agc tgt gag acc aaa gac ctg gtt gtg caa cag																528
Cys His Pro Trp Thr Ser Cys Glu Thr Lys Asp Leu Val Val Gln Gln																
165						170									175	
gca ggc aca aac aag act gat gtt gtc tgt ggt ccc cag gat cgg ctg																576
Ala Gly Thr Asn Lys Thr Asp Val Val Cys Gly Pro Gln Asp Arg Leu																
180						185									190	
aga gcc ctg gtg atc ccc atc atc ttc ggg atc ctg ttt gcc atc																624
Arg Ala Leu Val Val Ile Pro Ile Ile Phe Gly Ile Leu Phe Ala Ile																
195						200									205	
ctc ttg gtg ctg gtc ttt atc aaa aag gtg gcc aag aag cca acc aat																672
Leu Leu Val Leu Val Phe Ile Lys Lys Val Ala Lys Lys Pro Thr Asn																
210						215									220	
aag gcc ccc cac ccc aag cag gaa ccc cag gag atc aat ttt ccc gac																720
Lys Ala Pro His Pro Lys Gln Glu Pro Gln Glu Ile Asn Phe Pro Asp																
225						230									240	
gat ctt cct ggc tcc aac act gct gct cca gtg cag gag act tta cat																768
Asp Leu Pro Gly Ser Asn Thr Ala Ala Pro Val Gln Glu Thr Leu His																
245						250									255	
gga tgc caa ccg gtc acc cag gag gat ggc aaa gag agt cgc atc tca																816
Gly Cys Gln Pro Val Thr Gln Glu Asp Gly Lys Glu Ser Arg Ile Ser																
260						265									270	
gtg cag gag aga cag tga																834
Val Gln Glu Arg Gln *																
275																

<210> 12  
<211> 277  
<212> PRT  
<213> Homo sapiens

<400> 12  
Met Val Arg Leu Pro Leu Gln Cys Val Leu Trp Gly Cys Leu Leu Thr  
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Ala Val His Pro Glu Pro Pro Thr Ala Cys Arg Glu Lys Gln Tyr Leu  
20 25 30

Ile Asn Ser Gln Cys **Cys** Ser Leu Cys Gln Pro Gly Gln Lys Leu Val  
35 40 45  
Ser Asp Cys Thr Glu Phe Thr Glu Thr Glu Cys Leu Pro Cys Gly Glu  
50 55 60  
Ser Glu Phe Leu Asp **Thr** Trp Asn Arg Glu Thr His Cys His Gln His  
65 70 75 80  
Lys Tyr Cys Asp Pro Asn Leu Gly Leu Arg Val Gln Gln Lys Gly Thr  
85 90 95  
Ser Glu Thr Asp Thr Ile Cys Thr Cys Glu Glu Gly Trp His Cys Thr  
100 105 110  
Ser Glu Ala Cys Glu **Ser** Cys Val Leu His Arg Ser Cys Ser Pro Gly  
115 120 125  
Phe Gly Val Lys Gln Ile Ala Thr Gly Val Ser Asp Thr Ile Cys Glu  
130 135 140  
Pro Cys Pro Val Gly Phe Phe Ser Asn Val Ser Ser Ala Phe Glu Lys  
145 150 155 160  
Cys His Pro Trp Thr **Ser** Cys Glu Thr Lys Asp Leu Val Val Gln Gln  
165 170 175  
Ala Gly Thr Asn Lys Thr Asp Val Val Cys Gly Pro Gln Asp Arg Leu  
180 185 190  
Arg Ala Leu Val Val Ile Pro Ile Ile Phe Gly Ile Leu Phe Ala Ile  
195 200 205  
Leu Leu Val Leu Val Phe Ile Lys Lys Val Ala Lys Lys Pro Thr Asn  
210 215 220  
Lys Ala Pro His Pro Lys Gln Glu Pro Gln Glu Ile Asn Phe Pro Asp  
225 230 235 240  
Asp Leu Pro Gly Ser Asn Thr Ala Ala Pro Val Gln Glu Thr Leu His  
245 250 255  
Gly Cys Gln Pro Val Thr Gln Glu Asp Gly Lys Glu Ser Arg Ile Ser  
260 265 270  
Val Gln Glu Arg Gln  
275